Wright-Patterson Aero Club
PA28-161 (Warrior II) or 181 (Archer II) written test

Revised: Apr 2005
Reviewed: _____

Instructions: Choose the correct answer for the aircraft testing for:

Warrior / Archer

Reference: PA 28-161 (Warrior II) or 181 (Archer II) Pilot's Operating Handbook

Questions 1 - 25 are open book

1. (Limitations) When encountering moderate turbulence, you should fly at an airspeed of _____KIAS. Aircraft weight is 1900 lbs.

a. 88 KIAS
b. 100 KIAS
c. 96 KIAS
d. 111 KIAS

2. (Limitations) The maximum indicated airspeed allowed with flaps extended is:

a. 85 KIAS
b. 102 KIAS
c. 103 KIAS
d. 110 KIAS

3. (Limitations) The maximum useable fuel for the PA 28-161 or 181 is:

a. 34 gal
b. 40 gal
c. 48 gal
d. 50 gal

4. (Limitations) The maximum allowable baggage compartment weight in a PA 28-161 or 181 is:

a. 175 lbs
b. 200 lbs
c. 275 lbs
d. 300 lbs

5. (Limitations) The maximum certificated takeoff weight of the PA 28-161 or 181 is:

a. 2440 lbs
b. 2550 lbs
c. 2020 lbs
d. 1950 lbs

6. (Limitations) Spins are an approved utility category maneuver for the PA 28-161 or 181.

a. True
b. False

7. (Limitations) Maximum demonstrated crosswind component for the PA28-161 or 181 is:

a. 10 KTS
b. 15 KTS
c. 17 KTS
d. 20 KTS

8. (Normal Procedures) The best rate of climb speed (Vy) for the PA 28-161 or 181 is:

a. 63 KIAS
b. 76 KIAS
c. 79 KIAS
d. 85 KIAS

9. (Normal Procedures) When leaning the fuel mixture during cruise:

a. The mixture can not be leaned below 5,000 ft.
b. The mixture can be leaned with 75% power or less at any altitude.
c. The mixture can be leaned, regardless of power setting
d. The mixture control should be moved until the engine starts to run rough and left at that setting.

10. (Normal Procedures) Carburetor heat should be used in the PA 28-161 or 181:

a. Every 30 minutes
b. When there are indications of carburetor icing
c. During landing approach
d. When power setting is below 75%

11. (Performance) The short field takeoff distance (over 50 ft obstacle, flaps at 25^{O}, OAT 50^{O} F, weight 2200 lbs, calm winds, 2000 ft pressure altitude) is:

a. 1170 ft
b. 1310 ft
c. 1550 ft
d. 1700 ft

12. (Performance) To obtain 75% power at 5,000 ft pressure altitude, what engine speed must be used? (Assume: Best power mixture, OAT 20^{O} C)

a. 2660 rpm
b. 2630 rpm
c. 2525 rpm
d. 2450 rpm

13. (Performance) At 75% power and 4,000 ft pressure altitude, what true airspeed can be expected? (Assume: wheel fairings are installed, best power mixture, max gross weight and OAT is $+20^{O}$ C)

a. 114 KTAS
b. 122 KTAS
c. 126 KTAS
d. 130 KTAS

14. (Performance) Flying at 7,000 ft Pressure altitude over 1500 ft terrain, how far will the PA28-161 or 181 glide (engine out, prop windmilling, max gross weight, flaps 0, no wind, best glide speed, OAT 0^{O} C)?

a. 9 nm
b. 10 nm
c. 12 nm
d. 16 nm

15. (Performance) What minimum distance is required to land a PA 28-161 or 181 over a 50 ft obstacle? (Assume 2,000 ft pressure altitude, $+20^{O}$ deg C. OAT, max aircraft weight, 10 Kt headwind, full stall touchdown, maximum braking and paved/level/dry runway. (Note: AFM34-232 requires 2,000 ft minimum runway length)

a. 425 ft
b. 530 ft
c. 1080 ft
d. 1300 ft

16. (Wt & Bal) Assuming the aircraft Basic Empty weight is 1,487 lbs and moment is 129,244.3 in-lbs, determine the total weight and center of gravity for a PA28-161 or 181 with the following load.

Pilot-180 lbs, front passenger-170lbs, rear passengers-140 lbs(total), baggage-80 lbs. Fuel tanks are at tabs (17 gals each).

a. 2,261 lb, 91.2 in
b. 2,091 lb, 90.2 in
c. 2,261 lb, 90.6 in
d. 2,117 lb, 88.5 in

17. (Wt & Bal) Prior to operating in utility category, the weight and balance must be within allowable limits. Assume the basic aircraft empty weight is 1487 lbs with a moment of 129,244.3 in-lbs, the pilot weighs 180 lbs, fuel tanks are filled to the tabs (17 gals each). What is the maximum your instructor may weigh? Where will the C.G. be?

a. 170 lbs, 85.9 in
b. 259 lbs, 86.4 in
c. 149 lbs, 86.7 in
d. 149 lbs, 86.9 in

18. (Systems Description) The electric fuel pump should be "on" for:

a. Takeoff
b. Switching tanks
c. Landing
d. a, b & c

19. (Systems Description/Emergency Procedures) An inoperative alternator is indicated by a _____ indication on the ammeter and may be reset by turning the alternator switch off for _____ and then on.

a. 60 amp, 1 second
b. 0 amp, 1 second
c. 60 amp, 1 minute
d. 0 amp, 1 minute

20. (Systems Description) What is the normal vacuum indication in flight?

a. 51.0 in Hg.
b. 50.0 in Hg
c. 5.0 in Hg.
d. 0.5 in Hg

21. The pilot should review standard emergency procedures:

a. Periodically
b. To remain knowledgeable and proficient.
c. Because it is much easier to review them at 0 knots and stress level.
d. All of the above

22. Smoke in the cabin (electrical fire) requires the pilot to:

a. Lean the mixture to idle cutoff and shut off the magneto.
b. Shut off master switch and open vents
c. Shut off heater and defroster
d. Both B and C

23. Loss of fuel pressure should be corrected by:

a. Leaning mixture
b. Turning on the electric fuel pump
c. Check fuel selector is on a tank with fuel
d. Both B and C

24. In the event of power loss on takeoff, the pilot's first concern should be:

a. Switching fuel tanks
b. Maintaining a safe airspeed
c. Transmitting MAYDAY on 121.5 MHZ
d. Turning on the electric fuel pump

25. In the event of engine failure, the maximum glide distance will be obtained with flaps up and an indicated airspeed of:

a. 73 KIAS
b. 63 KIAS
c. 76 KIAS
d. 83 KIAS